

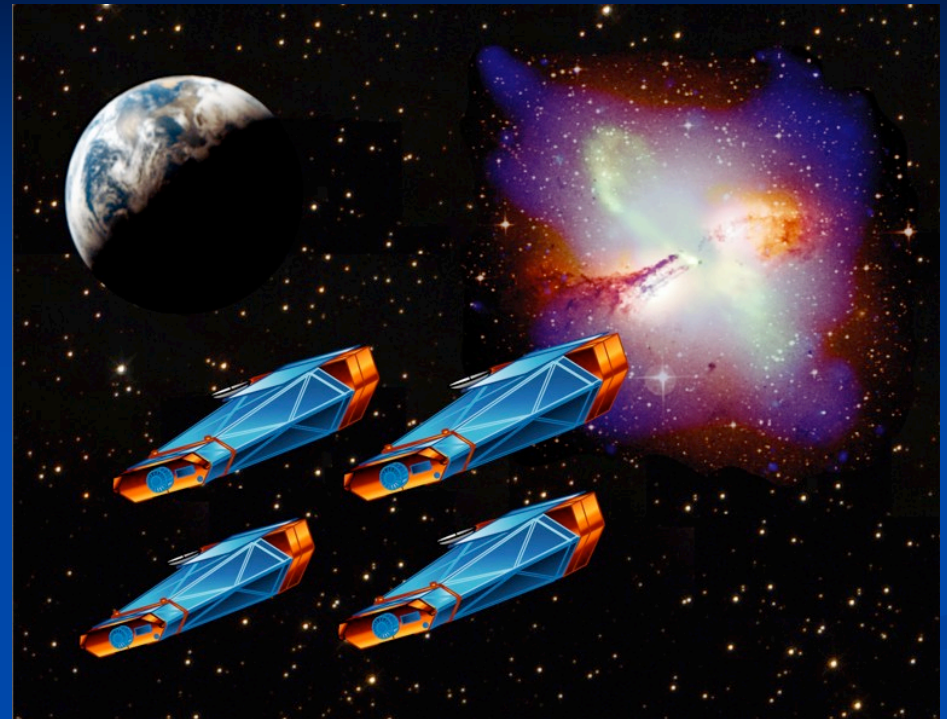
# Constellation X

100 times more powerful  
than any previous X-ray  
telescope!

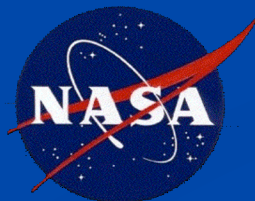
Why use more than one telescope??

RESOLUTION!

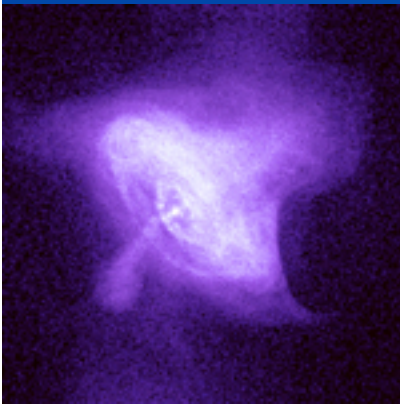
$$\vartheta = \frac{\lambda}{d}$$



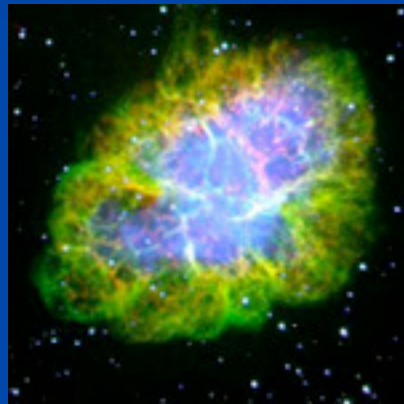
- Energy resolution of 2 eV at 6 keV
- FOV of ~15 arc second



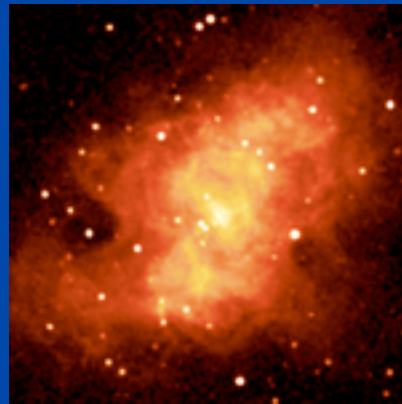
**The universe looks very different  
depending at what wavelength you're  
looking!!!**



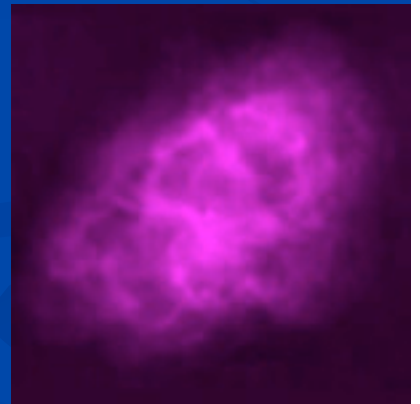
X- ray



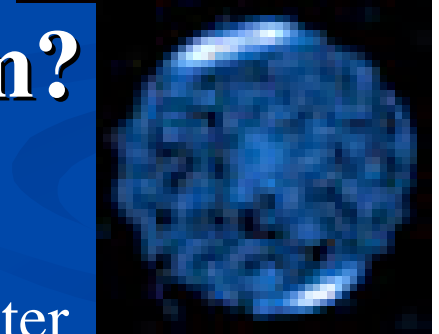
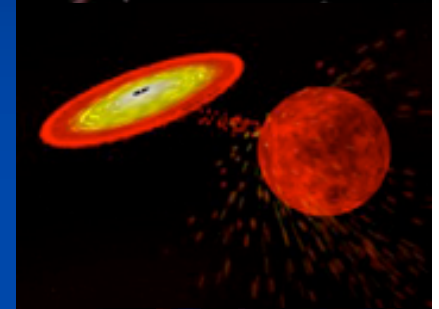
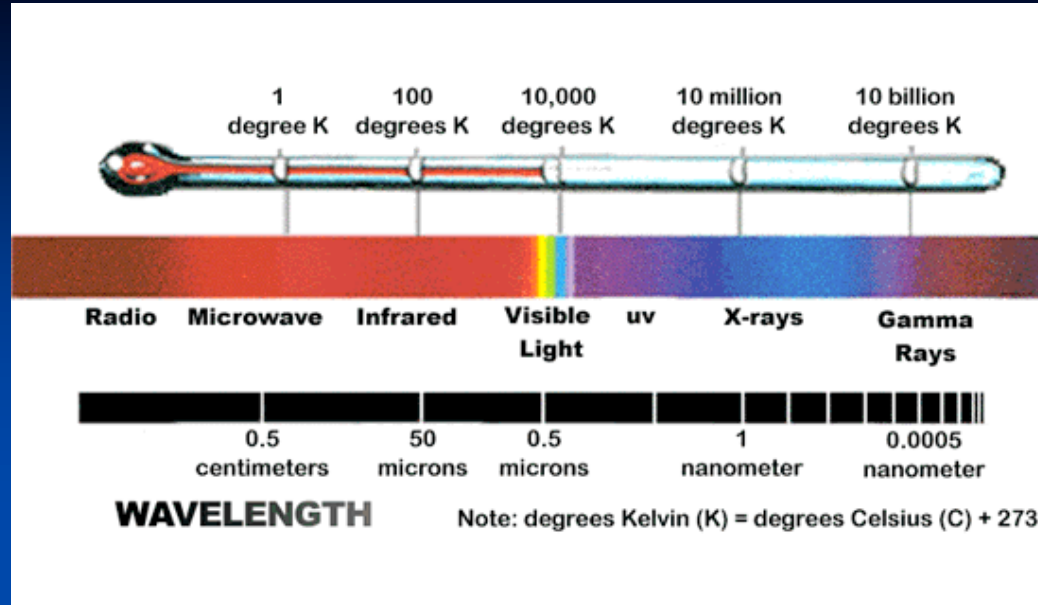
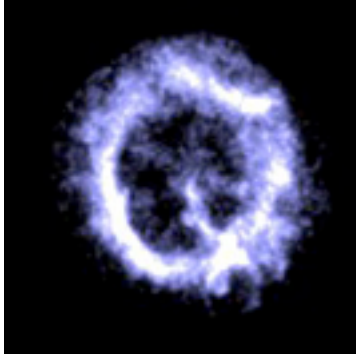
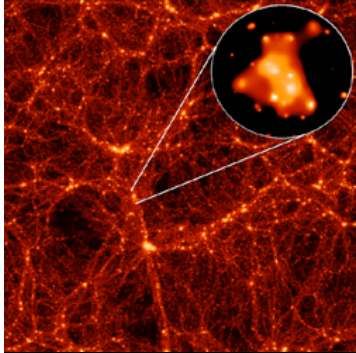
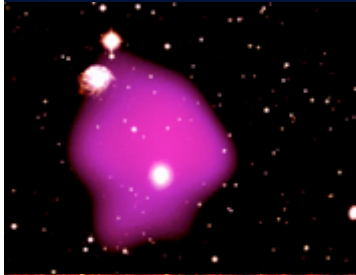
Optical



IR



Radio



## Where do X-rays come from?

Black body radiation

High speed electrons colliding with matter

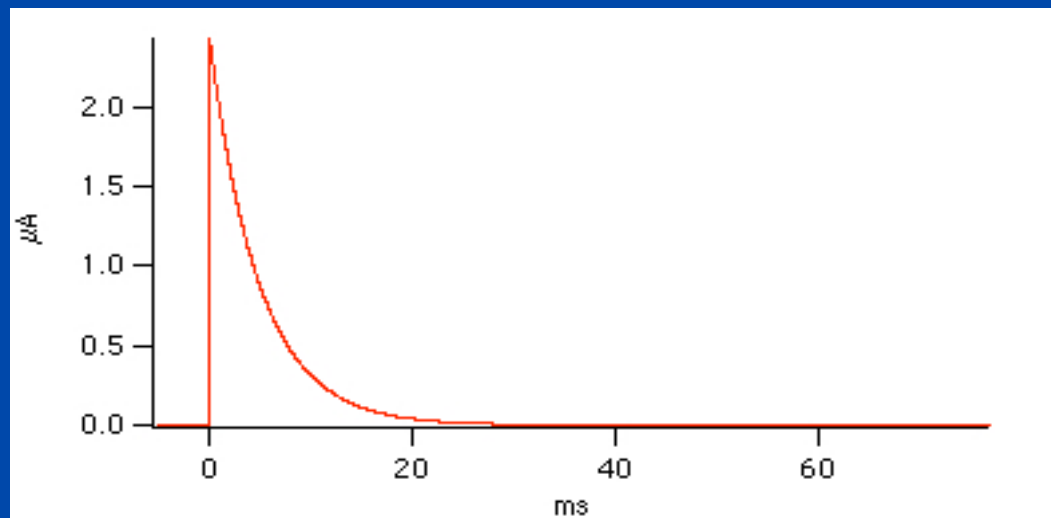
Stimulated emission

These processes occur in blackholes, neutron stars, hot intergalactic gas, planetary sources, SNR, etc.

# Microcalorimeter X-ray Detectors

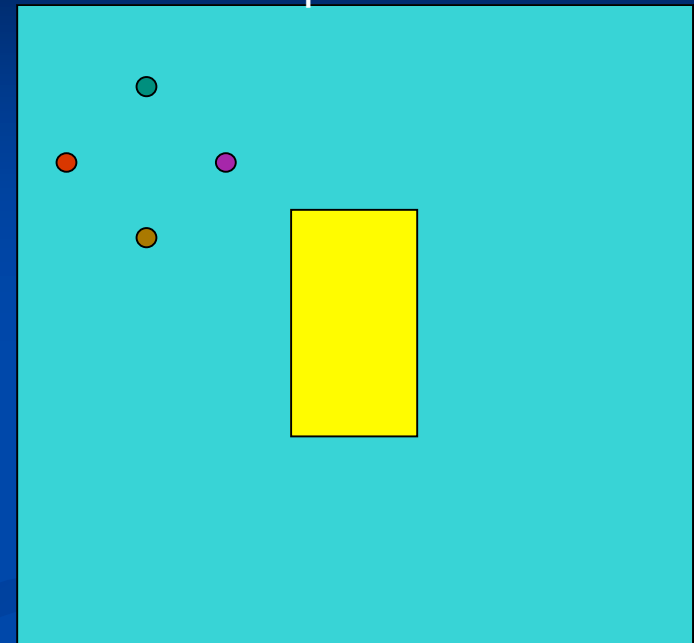
Energy Range: 0.2 - 6 keV

Energy Resolution: 2 eV



$$V = IR$$

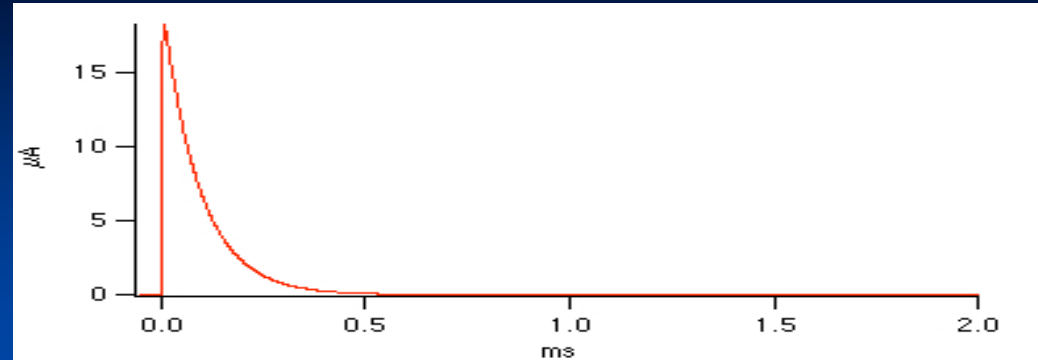
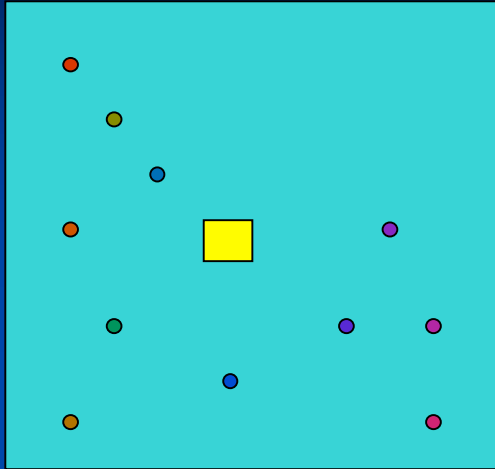
Top View



Side View



# My Work



$$\frac{\partial T}{\partial t} = D \left( \frac{\partial^2}{\partial x^2} + \frac{\partial^2}{\partial y^2} \right) T$$

